

**149.** A genetically modified host cell comprising the isolated nucleic acid of claim **24**, or the recombinant expression vector of claim **28**.

**150.** A library of nucleic acids comprising a plurality of members, wherein each member nucleic acid comprises a nucleotide sequence encoding a DNA-targeting RNA comprising:

- a) a first segment comprising a nucleotide sequence that is complementary to a target sequence in the target DNA;
- b) a second segment that interacts with a site-directed polypeptide; and
- c) a stability control sequence,

wherein each member differs from other members of the library in the nucleotide sequence of the first segment.

**151.** A library of claim **150**, wherein the nucleotide sequence encoding a DNA-targeting RNA is operably linked to a promoter.

**152.** A kit comprising:

- a) a DNA-targeting RNA, or a nucleic acid comprising a nucleotide sequence encoding the DNA-targeting RNA, wherein the DNA-targeting RNA comprises:

- i)) a first segment comprising a nucleotide sequence that is complementary to a target sequence in the target DNA;

- ii)) a second segment that interacts with a site-directed polypeptide; and

- iii) a stability control sequence; and

- b) a buffer.

**153.** The kit of claim **152**, further comprising a variant Cas9 site-directed polypeptide that exhibits reduced endodeoxyribonuclease activity relative to wild-type Cas9.

**154.** The kit of claim **152**, wherein the nucleic acid comprising a nucleotide sequence encoding the DNA-targeting RNA further comprises a nucleotide sequence encoding a variant Cas9 site-directed polypeptide that exhibits reduced endodeoxyribonuclease activity relative to wild-type Cas9.

**155.** The kit of claim **152**, further comprising a nucleic acid comprising a nucleotide sequence encoding a variant Cas9 site-directed polypeptide that exhibits reduced endodeoxyribonuclease activity relative to wild-type Cas9.

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